



Serial No. 10/724,117  
OKI.468C  
Response dated June 24, 2004

FW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of :  
Kazuo SUTO : Group Art Unit 2817  
Serial No. 10/724,117 : Examiner Henry Choe  
Filed December 1, 2003 :  
MODULATOR

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**RESPONSE AND REQUEST FOR  
NEW OFFICE ACTION**

U.S. Patent and Trademark Office  
220 20<sup>th</sup> Street S.  
Customer Window, Mail Stop **Amendment**  
Crystal Plaza Two, Lobby, Room 1B03  
Arlington, VA 22202

Sir:

Applicant acknowledges receipt of the Office Action dated June 16, 2004.


The Office Action contains one or more rejections of original claims 1-19 of the application. However, claims 1-19 were previously canceled in favor of new claims 20-25 in a Preliminary Amendment dated December 1, 2003. The Preliminary Amendment was filed concurrently with the application papers.

Attached are copies (a) the Preliminary Amendment, (b) a returned postcard receipt, (c) and page 2 of the Application Transmittal Form indicating that a Preliminary Amendment was filed.

In consideration of the above, Applicant requests issuance of a new non-final Office Action which addresses the merits of claims 20-25.

Respectfully submitted,

Volentine Francos, PLLC



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June 24, 2004

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Serial No. [NEW]  
OKI.468C  
Preliminary Amendment dated December 1, 2003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of :  
Kazuo SUTO :  
Serial No. [NEW] :  
Filed: December 1, 2003 :  
For: MODULATOR

**COPY**

**PRELIMINARY AMENDMENT**

U.S. Patent and Trademark Office  
2011 South Clark Place  
Customer Window, Mail Stop Patent Application  
Crystal Plaza Two, Lobby, Room 1B03  
Arlington, VA 22202

Sir:

Preliminary to the examination of the above-identified application, please  
enter the following amendments and consider the following remarks:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which  
begins on page 3 of this paper.

**Remarks/Arguments** begin on page 6 of this paper.

## **Amendments to the Specification**

*Please add the following section at page 1, between the title and the heading “BACKGROUND OF THE INVENTION”:*

### **CROSS-REFERENCE TO RELATED APPLICATIONS**

This is a continuation of U.S. Patent Application Number 10/053,897, filed January 24, 2002, the entire contents of each of which are hereby incorporated herein by reference for all purposes as if fully set forth herein.

### **Amendment to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listings of Claims**

Claims 1-19 (canceled)

Claim 20 (new): A modulator comprising:

a PLL circuit which detects a phase difference between an input signal of which a frequency is divided and a reference signal;

an AGC circuit which controls a gain of a modulating signal based on the input signal of which a frequency is divided, and which outputs a control signal; and

a voltage controlled oscillation circuit which controls an oscillation frequency of a signal outputted from said PLL circuit based on said control signal, wherein said voltage controlled oscillation circuit includes;

a first voltage controlled reactance unit which inputs said signal outputted from said PLL circuit;

a second voltage controlled reactance unit which inputs said control signal; and

a high-frequency oscillation circuit connected in parallel with said first and second voltage controlled reactance units, which outputs said input.

Claim 21 (new): The modulator according to claim 20, wherein the first voltage controlled reactance unit includes a first varactor diode and a second varactor diode, wherein the cathodes of the first and second varactor diodes are connected to each other, and wherein the signal outputted from the PLL circuit is inputted where the cathodes are connected to each other.

Claim 22 (new): The modulator according to claim 21, wherein the second voltage controlled reactance unit includes a third varactor diode and a fourth varactor diode, wherein the cathodes of the third varactor diode and fourth varactor diode are connected to each other, and wherein the control signal is inputted where the cathodes are connected to each other.

Claim 23 (new): The modulator according to claim 20, wherein the PLL circuit comprises:

- an oscillator which generates the reference signal;
- a frequency divider which divides a frequency of the input signal; and
- a comparator which compares the reference signal and the divided input signal to detect the phase difference.

Claim 24 (new): The modulator according to claim 20, wherein the first voltage controlled reactance unit includes a first varactor diode and a first capacitor, wherein a cathode of the first varactor diode is connected to one end of the first capacitor, and wherein the signal outputted from the PLL circuit is inputted where the cathode and the one end are connected to each other.

Claim 25 (new): The modulator according to claim 24, wherein the second voltage controlled reactance unit includes a second varactor diode and a second

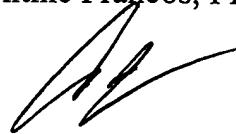
capacitor, wherein a cathode of the second varactor diode is connected to one end of the second capacitor, and wherein the control signal is inputted where the cathode and the one end are connected to each other.

**Remarks**

By this Preliminary Amendment, the specification as been revised, and Claims 1-19 have been canceled and new Claims 20-25 have been presented herewith. Entry of this Preliminary Amendment is respectfully requested.

Respectfully submitted,

Volentine Francos, PLLC



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Date: December 1, 2003

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**COPY**

**REQUEST FOR EARLY NOTIFICATION OF SERIAL NUMBER**

ATTY DOCKET #: OKI.468C

**MAIL STOP PATENT APPLICATION**

APPLICANT: Kazuo SUTO

DUE DATE:

SERIAL NO.: (NEW)

FILING DATE: December 1, 2003

TITLE: MODULATOR

**RECEIPT OF THE FOLLOWING PAPERS IS ACKNOWLEDGED:**

- Utility Patent Application Transmittal
- Preliminary Amendment
- Specification, claims and abstract (26 pages)
- Declaration and Power of Attorney (3 pages)
- 7 sheets of drawings for Figures 1-7
- Transmittal of Information Disclosure Statement including PTO-1449 form
- \$770 filing fee

17858 U.S. PTO  
10/724117



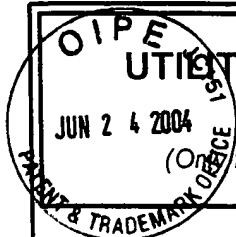
120103

DATE: December 1, 2003

ATTY: ACV

[Check No. 11191]

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UTILITY PATENT APPLICATION TRANSMITTAL  
(Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.  
OKI.468C

Total Pages in this Submission  
4

Application Elements (Continued)

**COPY**

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☒ Formal Number of Sheets 7
- b. ☐ Informal Number of Sheets \_\_\_\_\_
4. ☒ Oath or Declaration
- a. ☐ Newly executed (original or copy) ☐ Unexecuted
- b. ☒ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☐ With Power of Attorney ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application,  
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☒ Incorporation By Reference (usable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under  
Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby  
incorporated by reference therein.
6. ☐ CD ROM or CD-R in duplicate, large table or Computer Program (Appendix)
7. ☐ Application Data Sheet (See 37 CFR 1.76)
8. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all must be included)
- a. ☐ Computer Readable Form (CRF)
- b. ☐ Specification Sequence Listing on:
- i. ☐ CD-ROM or CD-R (2 copies); or
- ii. ☐ Paper
- c. ☐ Statement(s) Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(B) Statement (when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☒ Information Disclosure Statement/PTO-1449 ☐ Copies of IDS Citations
13. ☒ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☐ Certificate of Mailing
- ☐ First Class ☐ Express Mail (Specify Label No.): \_\_\_\_\_